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## CONGENITAL ANIRIDIA\*

### Report of a Case

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WILMINGTON, DELAWARE

Aniridia may be congenital or due to injury. Congenital may be complete or incomplete. It is stated in the American Journal of Ophthalmology that anatomical investigation always reveals a stump of iris. However, those cases may be regarded as complete when clinically no iris can be detected. Such cases are extremely rare.

deSchweinitz refers to aniridia in one paragraph in his Diseases of the Eye. Fuchs refers to it in his Text Book of Ophthalmology in three lines as follows: "The iris may be wanting altogether or all except a small residual portion. This defect is frequently complicated with congenital opacities in the cornea or in the lens".

Many of the cases reported show a heredity, either direct or collateral. Aniridia, amblyopia and nystagmus, as has been stated by someone, form a hereditary triad. Aniridia is almost without exception bilateral, although unilateral cases have been reported by Brunhuber and Tokkus.

These cases are supposed to be prone to glaucoma. It may be that stumps of iris in some cases, by shutting off Schlemm's Canal, are a factor in the causation of this complication. A concomitant lens luxation present may in some instances also be a contributing factor.

This gentleman has kindly come here this evening so you can see a rare condition. He is white and 33 years of age. He is the oldest of seven children. One boy died at 24 years of age of tuberculosis, one at 26 years of typhoid fever; the other children and the father and mother are living and well. There is no history of other eye trouble in the family.

He first came to me in January, 1922, com-

plaining of poor vision and frequent pains over his eyes. Vision then was O.D. 6/60, O.S. 6/45. The eyes at this visit were practically as they are now, with the exception of fewer corneal opacities which are now over the center of the left cornea, which reduces the vision of that eye to 2/60. Vision of right eye is now 6/50 and with —. 50= + 1.00x120 vision is 6/40+. I refracted him under homatropine and found his accommodation was at least 2.50 D. Irides, as far as can be seen, are entirely absent. There are stellate cataracts in the posterior cortical areas. Eye grounds are not seen satisfactorily but no gross changes can be made out. The tension of each eye is 28. There is spontaneous horizontal nystagmus. I prescribed blue glasses with a clear center of 5 mm. with which he can see better than without such a diaphragm.

### Heart Rate During Sleep

The tremendous variability of the normal heart rate, as well as its marked reduction and relative stability during sleep, have been demonstrated by Ernst P. Boas, New York, and Morris M. Weiss, Louisville, Ky. (*Journal A. M. A.*, June 29, 1929). In exophthalmic goiter, in the presence of cardiac insufficiency, of active myocarditis, and at time of mitral stenosis, the drop in rate during sleep is greatly diminished. This may serve as a valuable aid in diagnosis, particularly since patients with neurogenic tachycardia, whose condition may often be confused with one of these disorders, show a decided lowering of heart rate during sleep. Patients with auricular fibrillation show a marked instability of ventricular rate, and the observations suggest that neurogenic factors are of great importance in determining the ventricular rate in certain of them. These neurogenic factors in the tachycardia of auricular fibrillation cannot be controlled by digitalis alone.

\*Read before the New Castle County Medical Society, Wilmington, Del., Feb. 19, 1929. Case reported by request before the Section on Ophthalmology of the Philadelphia College of Physicians Nov. 15, 1928.

## PYURIA—ITS SIGNIFICANCE\*

LANG W. ANDERSON, M. D.

WILMINGTON, DELAWARE

On first thought one might be surprised that such an apparently familiar subject should have been chosen to be presented this evening. My reason for doing so is that pus or blood in the urine has assumed an entirely different significance at the present day. The periodic examination of corporation employees, the more frequent examination for purposes of life insurance, the sending of urine specimens to laboratories at regular intervals by the business men of our cities and the more thorough study of cases presenting themselves to the rank and file of our profession, are a few of the many reasons why pyuria and hematuria are danger signals which cannot be disregarded without a systematic search being made for a source.

### Sources of Pyuria

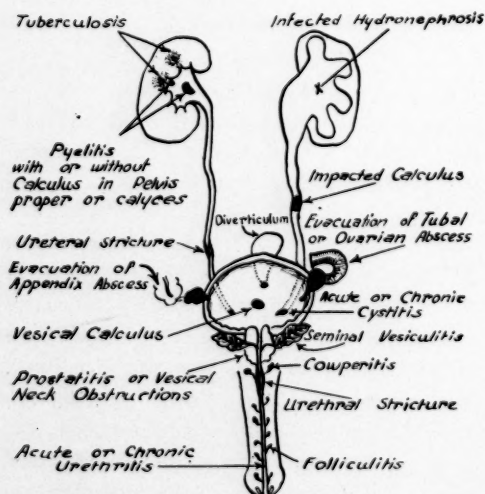


FIG. 1

The present day diagnostic resources of the urologist enable us to ascertain in practically every patient why pus or blood is present and to suggest treatment at a period that may avoid years of suffering or perhaps an early death.

On slight inspection, pyuria may be gross or only microscopic. Microscopic pyuria may be misleading, since repeated studies show that

in the urine of normal persons is found five to seven leucocytes to the high-power field. On the question of what constitutes pus in the urine or where the border line between the normal ends and microscopic pyuria begins, we have no universally accepted rule. Most technicians agree that the requisites in recording microscopic pyuria, are sterile containers, sterial catheterized specimens of female patients, the same practice being carried out on males who have microscopic pyuria and who give a remotely antecedent history of urethritis or prostatitis. Fifteen c.c. of urine should be centrifuged for five minutes, the sediment spread over an area of about 4 square centimeters and the number of pus cells per high-power field reported. Leucocytes showing clumping in groups of 7 to 10 and showing degeneration in the cytoplasm we characterize as pus cells. A differentiation of pus cells from leucocytes should be based upon examination of a stained smear of centrifuged urinary sediment.

Suffice to say, that turbidity of urine due to urates or phosphates can be determined easily by heating a specimen and then adding a few drops of a ten per cent acetic acid solution which will cause the apparent cloudiness to disappear, while the turbidity due to micro-organisms with few, if any, pus cells is determined by microscopic examination.

The reaction to litmus of pyuria urines is of value, in as much as bacteria are highly selective as to the media in which they thrive and for this reason a quantitative estimation of the acidity or alkalinity of a given specimen of urine may prove informing at least, since the colon bacillus, tubercular bacillus, typhoid bacillus, and gonococcus are, as a rule, found in urines giving an acid reaction, while staphylococcus, streptococcus and bacillus proteus are usually found in alkaline urines. Since in the majority of instances pus is the result of an infection, it will be accompanied usually by the causative bacteria. Exceptions to this rule are the inflammations caused by chemicals, and in tuberculosis where the bacillus tuberculosis is sometimes absent or not demonstrable.

Should the urine prove sterile to culture, the probability of tuberculosis is very strong. Further evidence is the power of tuberculous urine to inhibit the growth of bacteria and if allowed to stand the urine will remain clear for some

\*Read before the New Castle County Medical Society, Wilmington, Del. May 21, 1929.

time after the sediment has settled, whereas bacteria multiply rapidly in the ordinary pyogenic infections, and the urine becomes turbid. However, mixed infections on a tuberculous base may be misleading and tend to obscure the more important lesion. The diagnosis can only be made by demonstrating the tubercle bacillus in the urine or by inoculating a guinea pig with the urinary sediment.

Bumpus and others have shown that bacteria taken from the teeth and tonsils of pyelitis patients and injected into the root canals of dogs may produce canine pyelitis. There is no doubt that bacteria have a selected affinity for certain organs, but this fails to prove that pyelitis or pyuria is secondary to pyogenic focal infections in the majority of cases, since pyelitis is commonest in female infants under the age of six months, before the eruption of the teeth.

Changes due to infections in the genito-urinary tract may be quite advanced before they give rise to symptoms which cause the patient to consult a physician. It is to the silent pyuria cases which I desire especially to direct your attention and if this paper does not impress upon you the necessity of routine examination of the urine in every obscure case, it has failed to accomplish its purpose.

For clinical purposes pyuria may be divided into two groups:

- (1) Those with accompanying localizing symptoms or objective findings, such as pain (localizing or radiating), rigidity, swelling, chills, fever, and sweats.
- (2) Those in which there is an absence of such localizing signs. In the presence of arthritis, neuralgia, myalgia, or symptoms of generalized infection with recurrent fevers in children and adults an investigation of the genito-urinary tract should always be made as a possible source, after other foci of infections have been eliminated.

One may find a relatively small amount of pus in the urine in apparently severe cases of acute renal infections, as well as in the more slowly progressive cases, the degree of pyuria is no criterion of the extent of damage done by the infection, since pus may be absent from the urine in perinephritic abscesses, or in any other inflammatory lesions as pyelitis, pyelonephritis, pyone-

phrosis or tuberculosis, when the ureter from the affected side is blocked.

**SOURCES OF PYURIA:** These will enumerate in the order in which a search for such an underlying lesion would be undertaken. Figure I.

(1) Urethral and periurethral sources:—in cases of acute specific and non-specific urethritis the microscope and the 3 glass test make the topical diagnosis a comparatively easy task. The most common sources of the persistence of pyuria especially of minor degree, originally due to the gonococcus but superseded by the ordinary pus-producing organism, are folliculitis, strictures of the urethra, cowperitis, prostatitis, seminal vesiculitis and periurethral abscesses. It is beyond the scope of this paper to describe how such a topical diagnosis is made but it may be said in passing that the McCarthy cystourethroscope or panendoscope are instruments par excellence.

(2) Vesical sources: One's search must never end even after the seat of pyuria has been localized in the bladder without taking into consideration the possibility of stricture of the urethra, calculi, neoplasm (benign and malignant), diverticula and finally upper urinary tract infection which may be responsible for the condition, since a primary cystitis is infrequent. Obstructions at the bladder neck we have learned may be responsible for pyuria at all ages. Beer, Hyman and others have emphasized the necessity of looking for valvular and similar obstructions in the urethra and for contracture of the vesicle neck in infants and children. In the latter as well as in adults the urologist is constantly looking for diverticula as a potential source of pyuria. In adults, prostatic adenoma is no longer regarded as the only anatomic form of vesicle outlet obstruction. Medium bar formation, contracture of the orifice and enlargement due to adenoma of the glands of Albarran, have been assigned places of equal importance with that of prostatic adenoma. The retention of urine which results from such mechanical obstructions or atony of the detrusor muscle, favors localization of the organisms constantly present in normal urine. We must never omit examination of the nervous system to explain retention of urine not due to mechanical causes, since a "cord bladder" may be responsible for the condition.

Other sources of vesicle pyuria may be due



to rupture of appendicele, tubovarian and similar abscesses into the bladder.

Cystoscopy aided by cystography will enable one to localize a pyuria as being of vesicle origin far more rapidly and accurately than any other method.

Renal and Ureteral sources: The most common source of renal and ureteral pyuria are:

- (1) Stricture of the ureter (congenital and acquired).
- (2) Calculi.
- (3) Infections (non tubercular).
- (4) Tuberculosis.
- (5) Neoplasms.

It is not always an easy task to distinguish whether an infection is predominantly renal or ureteral. In a large proportion of cases one can localize the source of the pyuria as being in the upper urinary tract by the appearance of the ureteral orifice or by observing an efflux of pus from the affected side. We cannot depend upon these findings alone but call to our aid the use of bougies to determine the presence of ureteral strictures, wax-tipped catheters to determine the presence of ureteral calculi and plain X-ray supplemented by ureteropyelography.

We no longer deny the existence of strictures of the ureter although we may not agree with Hunner that they occur as frequently as he believes, yet a search for their presence should be made in adults as well as in infants who have a persistent pyuria.

We are prone to think of renal and ureteral calculi as always giving rise to symptoms indicative of their presence. Nothing could be more erroneous, and whenever an infection (due to the ordinary pyogenic organisms) of the upper urinary tract does not respond to treatment one should suspect that renal or ureteral calculus is present. To demonstrate this is not always a simple task when one recalls the fact that about fifteen per cent of such calculi do not yield a shadow on a radiographic film.

**CASE REPORT:** J. F., age forty-three, seen on June fifth, 1928, complained of a slight burning at neck of bladder on urinating and cloudy urine. He gave a history of having had a specific urethritis two years previous, which he had had treated and pronounced cured. On examination, there was no discharge at the urinary

meatus and a stained smear made from scrapings of the urethra was negative for gonococci. The three glass test showed a marked cloudiness of the urine which was more pronounced in the first and third glasses and which gave an acid reaction to litmus. A stained specimen of the urinary sediment showed many pus cells and mixed bacteria with a predominance of the colon bacillus. Rectal examination revealed a much enlarged prostate which was somewhat boggy with small nodules here and there. After four weeks of treatment, the prostate showed much improvement as to size, consistency and reduction in the number of pus cells expressed by massage. The three glass test of the urine continued to be uniformly cloudy. On June eleventh, an X-ray picture was made of the genito-urinary tract which revealed a shadow or calculus about two and one-half centimeters in length and one centimeter in width in the upper fourth of the right ureter.

On July eighteenth, cystoscopy revealed a bladder of normal capacity, with congestion of the trigone and right ureteral meatus. Urine coming from the right ureter was of small volume and force and appeared hazy. The indigocarmine functional test showed a delay in the appearance time on the affected side of eight minutes, while the appearance time on the left side was normal. A catheterized specimen of urine from the right ureter revealed many pus cells and mixed bacteria. A number six ureteral catheter met with a definite obstruction when passed up the right ureter for sixteen centimeters.

Owing to the fact that this patient suffered practically no pain or discomfort, he refused to return at regular intervals for ureteral dilations. The stone after moving down the ureter within four centimeters of the bladder become impacted, causing complete blockage of the ureter which was necessary to remove extraperitoneal on December first, 1928. His recovery was uneventful.

Localization of non-tuberculous infections and estimation of the degree of damage which has been done is not very difficult when our present day urological methods such as ureteral catheterizations, ureteropyelography, blood chemistry, functional test, etc., are applied.

About sixty-five per cent of all cases of renal tuberculosis present clinically under the picture



of a chronic cystitis, hence if a pyuria persists with symptoms incident to this affection, one should suspect renal tuberculosis. In about ten per cent of the cases of this disease a symptomless pyuria is an outstanding feature. It is to this small group that I would especially direct your attention, because so many are permitted to progress until both kidneys are involved. When one recalls that in about ninety per cent of all cases of renal tuberculosis the disease remains confined to one kidney for a relatively long period, two to three years, it is obvious that early diagnosis would result in the saving of lives since we know that nephrectomy will result in about sixty per cent of cures if the disease is still unilateral.

### Infantile Kidney

ABRAHAM G. FLEISCHMAN and BOYD ANDERSON, Des Moines, Iowa, (*Journal A. M. A.*, July 6, 1929), report one case. The following are the important and salient facts that should be remembered with reference to infantile kidney: (1) The function of an infantile kidney shows marked impairment as determined by the calorimetric dyes but still is able to excrete normal urine and concentrate urea in normal quantities. (2) The function of a kidney in which disease is present is always greater than that of the supposedly normal infantile kidney. (3) Pyelography is often of assistance in the diagnosis of this rare condition but cannot always be relied on. (4) The decision before advising surgery in a diseased kidney when the other is infantile must be made cautiously because of the inability of the infantile kidney to undergo compensatory hypertrophy, an essential factor if a successful outcome is to be attained.

### DENTAL GRANULOMAS

George L. Rohdenburg and Sigmund W. A. Franken, New York (*Journal A. M. A.*, July 20, 1929), conclude that the so-called dental granuloma is primarily an epithelial cyst which most probably arises following irritation of the epithelial sheath of the tooth. The nature of this irritant may be various. The condition occurs slightly more frequently in women than in men. The average age of the patients is 40 in women and 44 in men. This epithelial cyst may, subsequent to its formation, become infected by a variety of microorganisms, of which the most common is the nonhemolytic streptococcus. Infection was demonstrable in 11 per cent of 100 granulomas examined histologically, and in 64 per cent of sixty-five granulomas examined bacteriologically.

## THE CANCER SURVEY IN THE STATE OF DELAWARE\*

### PRELIMINARY REPORT

J. W. COX, M. D.

Representative of the American Society for the  
Control of Cancer,  
NEW YORK, N. Y.

Studies of cancer throughout the world confirm the belief that it is increasing. The official death rate from cancer in the United States has increased 30.9 per cent during the last 20 years. Cancer now ranks as the third cause of death.

All parts of the country, all races, all classes and both sexes are affected by it. More people die of cancer than of all the infectious diseases combined, excepting tuberculosis. More people die of cancer than are killed by railroads, street cars, automobiles, fires, drowning, mining accidents, machinery, poisons, homicides and suicides—all put together.

A careful study of the cancer vital statistics has just been completed by A. C. Jost, M. D., Executive Secretary of the Delaware State Board of Health. This study covers the deaths from cancer from 1921 to 1928 inclusive and embraces 1613 deaths, 1450 white and 163 colored. Analysis of this data and the results obtained by Dr. Jost are distinct contributions in the fight against cancer. If the cancer survey of Delaware accomplished nothing more, it has been worth while, because this statistical data will be quoted and used internationally for constructive purposes.

The following facts which are of special interest to this group, have been taken from this statistical study.

1. The estimated population of Delaware for 1928 is 239,560, with an average age of about 30 years. The average expectancy of life is approximately 39 years.

2. The median age of death has increased from 50.6 years in 1921 to 55.8 years in 1928. In other words, the median life span has been increased 5.2 years since 1921.

3. The number of cancer deaths reported in 1928 were 209 white and 23 colored, a total of 232. The actual number, although somewhat larger, cannot be computed because residents of

\*Read before the Executive Committee of the Delaware Section of the American Society for the Control of Cancer, and representatives of the hospitals, Wilmington, Delaware, June 26, 1929.

Delaware who die in hospitals of neighboring states are not reported to their home state.

4. The cancer death rate for whites increased from 72.8 per 1000 deaths in 1921 to 99.8 in 1928.

The cancer death rate for colored, during the same period, increased only from 69.3 per 1000 deaths to 75.9.

The increase incident for the white race in eight years is 37%. The increase for colored is 9.5%.

5. The percentage of cancer deaths compared with the total deaths of 30 years and over has increased from 8.36 in 1921 to 9.56 in 1928. This means that there is approximately one death from cancer out of every 10 deaths.

6. The average age of 1450 white cancer deaths was 62 years.

The average age of 163 colored cancer deaths was 57 years.

7. White individuals free of cancer at the age of 62 have a life expectancy of 15 years.

The black individuals at the age of 57 have a life expectancy of 19 years.

8. The cancer rate for females of both races, to all intents, is double the rate for the males. But if cancer of the female generative organs and breasts are excluded the rates would be practically identical.

9. The highest single rate is for cancer of the generative organs among the colored.

10. Cancer of the breast is, on the other hand, a more common cause of death among white females.

11. White males have the highest rates for buccal, skin and other forms of cancer.

12. White females lead in respect to cancer of the liver and stomach.

13. Colored males lead in respect to cancer of the bladder.

14. The cancer mortality among members of the colored race is less than among the white.

15. Members of the colored race develop cancer at a younger age than members of the white race.

16. Computing on a population of 239,560, if cancer as a cause of death was non-existent, the life capital of the state would be increased approximately 300,000 years. This amount would cover a period of 40 years. On this basis by estimating at \$100, the value of a year of the life of each individual to his or her community

or to the state, the monetary loss is easily calculated.

Loss during a period of 40 years \$30,000,000.  
Loss during one year \$ 750,000.

## II. NATURAL DURATION OF CANCER

The following data relative to the natural duration of cancer was reported at the International Cancer Congress at London 1928:

Breast .....	38 months
Uterus .....	20 months
Rectum .....	26 months
Tongue .....	16 months
Buccal cavity .....	16 months
Larynx .....	14 months
Esophagus .....	12 months

The Massachusetts survey gives the following additional:

Stomach .....	15.8 months
Peritoneum and intestines .....	18.8 months
Skin .....	37.8 months
Male genitals .....	25 months

## III. AVERAGE DELAY BEFORE CONSULTING A PHYSICIAN OR HOSPITAL

In Massachusetts and in Philadelphia the average person waits about eight months between the first symptoms noted and the first consultation with a physician. The actual period of delay in Delaware we do not know. On the other hand the percentage of early cancer cases seeking aid from hospitals in Delaware is 1.2%, in Philadelphia 3.6%, and in New York from 25 to 30%. When we know that the chance of cure decreases as much as 16% per month in one type of cancer, it is apparent that the long delay is the cause of many needless deaths.

## IV. POSSIBILITY OF CURE

Following is a summary of a statement given out at the close of the International Cancer Symposium held at Lake Mohonk, 1926.

"Cancer in some parts of the body can be discovered in a very early stage, and if these cases are treated properly the prospect for a permanent cure is good.

"The cure of cancer depends upon discovering the growth before it has done irreparable injury to a vital part of the body and before it has spread to other parts.

"The public must be taught the earliest danger signals of cancer which can be recognized by

persons without a special knowledge of the subject and induced to seek competent medical attention when any of these indications are believed to be present.

"The most reliable forms of treatment and, in fact, the only ones thus far justified by experience and observation, depend upon surgery, radium, and x-ray.

"Efforts toward the control of cancer should be made in two principal directions, the promotion of research in order to increase the existing knowledge of the subject, and the practical employment of the information which is at hand."

#### FACTS THE PUBLIC SHOULD KNOW

There seems to be no fact of greater importance to the public than that cancer is always local in its beginning, and that when local and situated in an accessible site it is practically always removable, and in many cases curable. Our most conservative surgeons and radiologists agree that under favorable circumstances

- 75% of breast cancers,
- 45% of cervix cancers,
- 60% of mouth cancers,
- 86% of lip cancers,
- 95% of skin cancers

might be permanently controlled.

The London Cancer Congress, 1928, reports that 90% of local cancer of the breast has not recurred after 10 years.

#### V. STUDY OF THE CANCER FACILITIES FOR DIAGNOSIS AND TREATMENT EXISTING IN THE HOSPITALS OF DELAWARE, IN ORDER TO DETERMINE THE VOLUME AND QUALITY OF THE SERVICES OFFERED.

It is evident from a study of the hospitals of Delaware that the cancer patient applying for admission is admitted rather reluctantly, although nearly every hospital will accept early, late, or terminal cases. As a matter of choice the early case is desired, but, in 1928, all the data available showed only 1.2% of the total cases admitted to be early. Hospital authorities and surgeons who are called upon to advise and treat cancer patients, 98.8% of whom offer a poor prognosis, are almost justified from their actual experience in doubting that cancer is curable.

During 1928, 155 cancer patients were admitted to eight hospitals; 98 of the 550 beds were

unoccupied. Thus the aggregate might have been increased, provided the cancer public had seen the advisability of securing treatment of the quality offered. Since the number of cancer deaths for 1928 was 232, the minimum number of cancer patients needing hospitalization would be 476. This number, if equally distributed throughout the year, would necessitate 50 beds. There were 98 beds available, the greatest number being in Delaware Hospital. Thus it is evident, in view of the increased number of beds contemplated as the result of building plans, that Delaware is not handicapped for beds.

While numerous experiments are being carried on in various parts of the world in an attempt to find more effective remedial measures in the treatment of cancer, there are at the present time but three universally accepted remedies:

1. Surgery
2. Xray
3. Radium

The most important of these three agents is surgery. On the other hand surgery alone is often inadequate and frequently calls radium and x-ray to aid towards the most effective results. Thus the hospital in the future which treats cancer patients without adequate physical equipment, will be judged by the lack of quality and by the ineffectiveness of the service offered.

Physical equipment as it refers to adequate cancer treatment means:

1. Superficial x-ray therapy department
2. Deep x-ray therapy department
3. A laboratory equipped to make frozen and paraffin sections
4. 2 grams of radium
5. A radium emanation plant

The hospitals of Delaware should not be embarrassed on discovery of the fact that with the exception of surgery and superficial x-ray therapy for cancer, they lack the equipment for applying the present day knowledge. Equipment of this nature is very costly. As a practical and economic measure it would be unwise for all hospitals in Delaware to be so equipped. On the other hand, the citizens of Delaware have a right to expect the best treatment.

In order to emphasize the point that an emergency exists in Delaware, permit me to enumerate



in rapid succession the reasons why cancer cannot at present be adequately treated in the Delaware hospitals:

1. Lack of physical equipment
2. No specialized personnel to operate equipment
3. No laboratory facilities
4. No cancer out-patient departments
5. No follow-up service
6. No system of adequate records or statistics
7. No group study of cancer patients.

That Delaware has a cancer problem cannot be refuted. We are satisfied that there are 600 active cases of cancer existing in Delaware today. We know that cancer has increased among the white race 37% in 8 years. We have calculated the monetary loss due to cancer and found that it represents \$750,000 annually. We have studied the natural duration of cancer and discovered that if untreated it invariably causes death, and that the life expectancy of the white patient is decreased 15 years. Observations show that cancer in the beginning is a localized disease and is at the time in most cases curable. In spite of this fact we know that the average cancer patient delays 8 months before seeking competent advice and treatment. It cannot be denied that the facilities for diagnosing and treating of cancer in Delaware are inadequate.

#### HOW THE PROBLEM MUST BE ATTACKED

1. Campaign of Public Education
2. Make provision for adequate physical equipment
3. Plan for a specialized staff

Even now the campaign for public education is under way. The Delaware survey is a part of the program. The function of education is in the hands of the Delaware Committee of the American Society for the Control of Cancer. This committee is divided into three principal divisions with various sub-committees. Here may be found represented the State Medical Society through its Cancer Committee Chairman; the State Health Department by its Executive Secretary; the Public by the State Representative of the American Society for the Control of Cancer. This group appreciates its great responsibility and has accepted it in good faith believing that their fellow-citizens, co-workers and conferees will give to the cause their active support. On the other hand, the view is internationally held

that a highly organized campaign of public education, while highly important, should await the provision of more adequate facilities for the treatment of cancer.

Several ways have been suggested whereby adequate facilities for diagnosis and treatment of cancer might be provided for the hospitals of Delaware:

1. That each hospital buy the necessary equipment and organize a special cancer staff, thus enabling each hospital to diagnose and treat all cases of cancer seeking admission. This suggestion is neither feasible nor economical. At present the trained and experienced personnel necessary for the efficient operation of a deep xray therapy department, or a radium department, or even a pathological laboratory is not even available for one hospital.

2. That each hospital sends its patients to a neighboring city for deep xray and radium. This method has been tried. Its disadvantages far outweigh its advantages. This practice would work to the detriment of the patient, unless all hospitals in the State would refuse to admit cancer cases.

3. That there be established one central institute in Delaware independent of all local hospitals, but cooperating with them. It should be prepared for diagnosis, treatment, research, and education in the field of cancer. For purposes of research it should be under affiliation with the Cancer Research Committee of some University. It should be fully equipped for all forms of treatment: by surgery, xray, radium, and other methods.

At least 2 grams of radium should be available. A radium emanation plant should be provided. The xray equipment should be limited to the most approved instruments for deep therapy.

The staff of the institute should be full time, paid specialists functioning under a general medical director who is responsible to a lay governing board. This staff should consist of:

1. A competent full time pathologist, experienced in the field of cancer diagnosis and study.
2. A competent physicist, trained in the physics of radiation.
3. A competent chemist.
4. A biologist or general physiologist.
5. A full time roentgenologist.
6. A full time social service nurse.

The services of the institute and its staff should be available to an affiliated hospital.

All cases of cancer treated in the institute should be returned to the sending hospital immediately on completion of treatment.

A hospital desiring affiliation with the institute should provide itself with the following minimum of specialists:

1. A clinical director.
2. A roentgenologist for superficial therapy.
3. A laryngologist.
4. A gynecologist.
5. A general surgeon.
6. A gastro-enterologist.
7. A urologist.

This hospital staff should consider itself while working in the field of cancer as functioning under the general director of the institute. Affiliated hospitals should use a history sheet furnished by the institute. All cancer histories should be made available to the institute for study.

The final diagnosis and the method of treatment of each patient, both ward and private, should be determined by consultation between the clinical director and the specialist and such other officers as may be required to furnish necessary data. Obscure and difficult cases should be referred to a general conference consisting of the cancer staff of the hospital and of the institute.

### Respiratory Disorders In Infants

The prevention and control of the acute respiratory diseases of infancy by control of contact infection is discussed by HAROLD ABRAMSON and LOUIS H. BARENBERG, New York (*Journal A. M. A.*, June 29, 1929). An attempt was made to prevent the transmission of infection not only from attendant to child but also from child to child by employing a nursing technic similar to that elaborated in the army during the recent war. All physicians, nurses, and attendants coming in contact with the infants were required to wear surgical masks which were changed daily. Hands were scrubbed thoroughly and immersed in a solution of mercuric chloride before the examination or handling of each child. Paper towels were used and discarded. No visitors

were allowed in the ward except during the regular monthly visiting days; such visitors were then provided with masks. The fondling and petting of the children were prohibited. An adequate nursing staff was provided; each nurse was inspected daily when reporting for duty and was excluded from service temporarily if found to have a cold or sore throat. Physicians who had similar ailments refrained from entering this ward. Infants were examined only when necessary, and were bathed, diapered and cared for separately. The dressing table linen was changed for each child; such articles as bottle pads, blankets, clothing and toys were kept at the individual bedside. Any rise in temperature was reported at once and the infant segregated immediately and cared for by a special nurse. The nurses were provided with clean gowns, which were left at the bedside. Whenever it was deemed necessary sick infants were removed from the ward, particularly if catarrhal symptoms were evident. Cooking utensils, plates and spoons kept in cribs showed almost a 50 per cent higher were boiled after each feeding. No dry dusting or sweeping was permitted. A comparison made with infants in a control ward where no such measures were carried out showed that a decrease in respiratory diseases of only 10 per cent was accomplished by this means. The greatest difficulties lay in occasional infractions of technic on the part of the nurses, as well as in the impossibility of absolutely preventing contact infections from child to child. Infants who were incidence of respiratory disorders than those cared for in bassinets. The frequency of infection per child was less in the protected than in the control ward. Aseptic nursing was of no value in preventing the spread of an outbreak of varicella.

### Ethylene

Following the explosion in Evansville, supposedly due to ethylene, MOSES SALZER, Cincinnati (*Journal A. M. A.*, June 22, 1929), undertook an investigation. He found that the quantity of ethylene capable of explosion at any one time is too small to produce any considerable damage. A nation wide survey of more than 425,000 ethylene anesthetics shows a remarkably favorable record. He concludes that ethylene is probably as safe as ether, if not safer.

## The AGES of CANCER DECEDENTS\*

A. C. JOST, M. D.

DOVER, DELAWARE

In an examination being made of the cancer statistics of the State of Delaware, it was noted that the crude rates for the period concerned (1921 to 1928 inclusive) differed widely as affected by the race and sex of the decedent. The rate for white females was the highest, (111.8 for each hundred thousand of the white females of the population) followed in order by those of the colored females (91.5), the white males (68.1) and the colored males (45.2). The total number of cancer deaths from which the rates were computed was 1613, of whom 1450 were white and 163 were colored. Of the whites, there were 890 females and 560 males. There were 57 colored males and 106 colored females.

This finding appeared to be quite in keeping with the view to which expression has many times been given, that the white race seems to be especially vulnerable to cancer and that, generally speaking, the higher racial types are more subject to the disease than are races considered to occupy lower places in the scale of development.

When the rates by age groups were examined, it was noted that the six age groups in which the cancer deaths almost without exception fell, could be grouped into three divisions or classes. In the first class or division, the rates for the colored, with one exception, exceeded those of the whites.

Age group	White Male	Colored Male	White Female	Colored Female
30-39	8	16	31	53
40-49	40	22	135	211

Here, only the rate for white males aged 40 to 49 is higher than the rate of the colored of the same ages, elsewhere the colored rates being the highest. The differences may not be statistically significant, that is, they may not exceed three times the probable errors, but at least there is sufficient of a difference to be noticeable.

In the second class or division, there is a tendency for the rates to be very similar, although the relations between the rates by races are being reversed.

Age group	White Male	Colored Male	White Female	Colored Female
50-59	151	156	283	279
60-69	388	280	524	484

\*Preliminary report by the Executive Secretary, Delaware State Board of Health.

In the third class or division, the rates for the whites tend to be very much in excess of those of the colored—nearly, if not quite, doubling them.

Age group	White Male	Colored Male	White Female	Colored Female
70-79	684	367	829	458
80 and over	951	579	1190	510

In this division, several of the differences are statistically significant, exceeding three times the probable errors, when these are calculated by the formula giving this error from a single observation.

The fact that for a time the rates for the colored races appeared to be the higher led to a careful examination of the death certificates, since this seemed to be inconsistent with the view that the colored races enjoy a relative immunity. Were this the case, one would not expect their members to die at ages younger than do those of a race considered to be less resistant to the disease. It was considered advisable to be assured that the difference was not due to the fact that a tabulation by age groups had been made, which tabulation might not represent the facts so truly as would one of the actual ages.

Re-examined, the ages at death were tabulated as being those of the nearest birthday. The errors here would counterbalance, it was thought, except in so far as the highest age group was concerned, and under any circumstances could not be great. Deaths from sarcoma were excluded from the tabulation. In but relatively few instances did coroners, and not physicians, sign the death certificates.

### AGES OF CANCER DECEDENTS

#### DEATHS

Age	White Males	White Females	Colored Both Sexes
24	---	1	1
5	---	2	---
6	---	---	1
7	2	---	1
8	---	---	1
9	---	1	---
30	1	1	1
31	1	3	1
2	---	3	2
3	---	2	1
4	---	3	3
35	1	1	1
6	1	3	---
7	2	5	1
8	2	8	1
9	2	8	1
40	2	8	2
1	4	8	4
2	3	8	2
3	2	12	2



AGES OF CANCER DECEDENTS  
DEATHS

Age	White Males	White Females	Colored Both Sexes
4	4	14	2
45	5	14	7
6	4	11	5
7	4	10	2
8	9	19	6
9	6	24	3
50	12	20	6
1	9	22	3
2	5	21	3
3	12	20	3
4	8	22	4
55	17	24	2
6	10	18	9
7	9	19	5
8	15	17	6
9	16	20	4
60	16	23	10
1	19	24	3
2	20	24	3
3	20	31	5
4	14	26	2
65	22	24	5
6	23	23	7
7	19	20	2
8	25	32	3
9	19	20	1
70	13	20	4
71	10	23	4
2	23	24	2
3	13	24	3
4	21	18	2
75	22	23	2
6	12	21	1
7	9	11	---
8	13	11	1
9	10	15	1
80	13	14	1
1	8	8	1
2	6	17	1
3	3	9	---
4	5	10	1
85	2	9	---
6	2	4	1
7	2	3	---
8	1	3	---
9	3	---	---
90	1	1	1
1	---	1	---
2	1	---	---
3	---	1	---
4	---	1	---
95	2	---	---
Totals	560	890	163

There is little evidence in the foregoing table, in so far as the whites are concerned, of that grouping around the years marking a full or a half decade, which is so commonly seen in any census enumeration. As well as these years, (the ones ending in 0 or 5) the ones immediately following them, from the manner in which the tabulation was made, would have shown undue proportions at the expense of the intermediate ones, if the ages at death were reported so incorrectly as are the ages of the living to the

census enumerator. In respect of the white males, the years 50 and 55 appear to stand out prominently, but these are almost the only evidences of that form of inaccuracy. It is noteworthy that for whites, both male and female, the age 68 represents the peak of the curve.

In respect of the colored, the conditions are quite different. From the age 40 on, there is seen clustering around the ages ending in the figures 0, 1, 5 and 6. The fourteen individual years, 40, 41, 45, 46, 50, 51, 55, 56, 60, 61, 65, 66, 70 and 71 were given as the ages at death of 13 more individuals than were the eighteen years intervening. Nearly half of all persons dying were said to be of those fourteen ages, whereas among the whites deaths of persons of those ages did not account for a quarter of the total. This does not seem to be a correct distribution, and indicates that only limited reliance can be placed on the accuracy of the reported ages, in so far as the colored are concerned. The apex of the series is the age 60, however, contrasting with age 68 for the whites. Moreover, in the ages up to 30, two-thirds as many deaths took place among the colored as among the whites, though the colored represents only approximately one-seventh of the population.

The number of years lived by 1450 whites who died of cancer was 91,168, the average age at death being 62.8 years. Five hundred and sixty white males died at the average age of 64.5 years; eight hundred and ninety white females lived to be an average of 61.8 years old. The average age at death of 163 colored was 55.9. Fifty-seven colored males died aged 59.9; one hundred and six colored females were aged 53.8 years at death.

The actual number of years lived by 163 colored cancer patients was 9124, an average for each of 55.9. If these cancer deaths are tabulated in age groups of decades ending in the figure 0, and the age of each individual taken as being that of the center of his or her particular group, the sum of the years lived would have reached a higher number, 9245, the average being 56.7 years, an increase of .8 years over that actually experienced. In the same way, the average age of death of the whites, if computed from the central age of the group, would have been 63.5, an increase of .7 years over the actual experience. The compilation of

ages from the age groups is therefore subject to an error of over-estimation of 1.4% in case of the colored and 1.1% in respect of the whites. The difference between these two errors of over-estimation is not sufficient to account for the excess of the colored rates over those of the whites, in three out of four comparable instances affecting the age groups 30-39 and 40-49.

As regards both races, the lessened average age shown by the females was largely attributable to the result of the mortality from cancer of the genitals and the breasts. Deducting from the 890 white females the 394 who died of these cancers, and whose average age at death was 58.5, the remaining 496 died aged 64.4, almost exactly the age at which the white males died. In the same way, deducting from the 106 colored

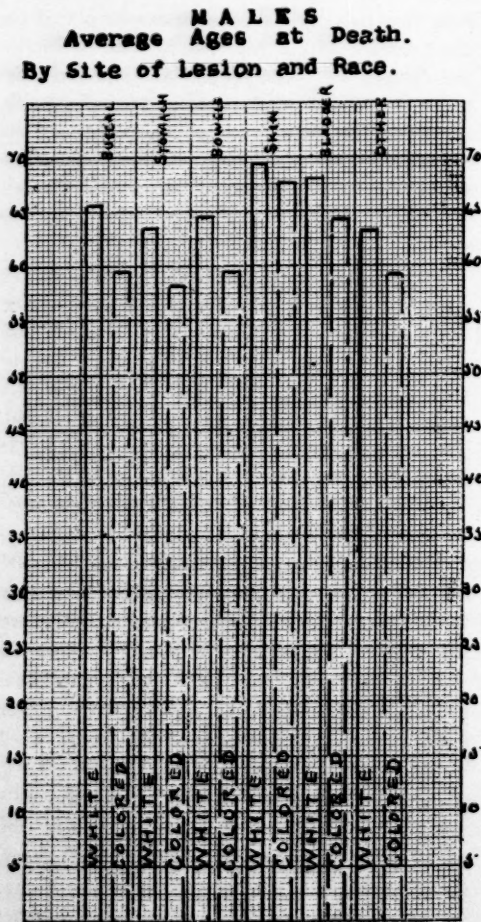


FIG. 1

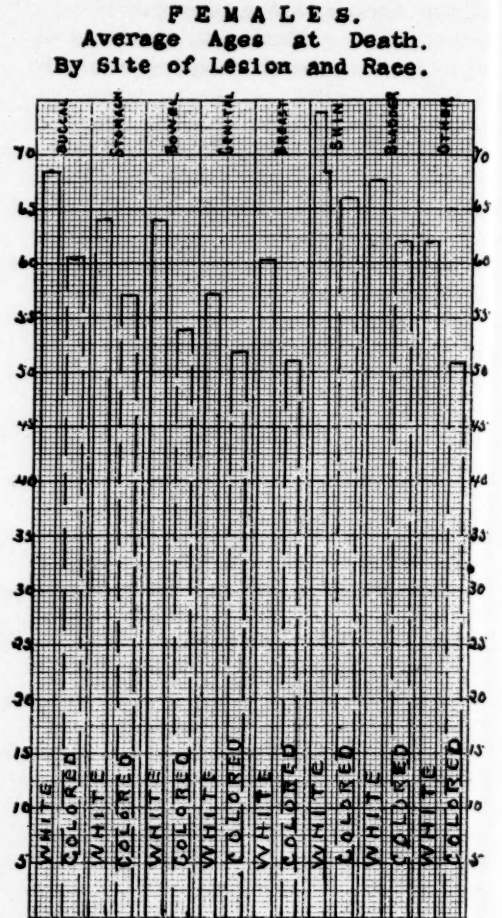


FIG. 2

females the 59 who died of sex cancers, their average age at death being 51.6, the ages of the remaining averaged 56.6. Here there was not so close an approximation as was the case in respect of the whites (59.9 and 56.6 contrasting with 64.5 and 64.4).

The following table gives the average age at death by race for each of the different forms of cancer, as classified from the death certificates.

Form of Disease	White Males		Colored Females	
	White Males	Colored Males	White Females	Colored Females
Buccal	65.5	59.5	68.5	60.5
Stomach and Liver	63.6	58.2	64.2	57.0
Bowel	64.4	59.4	64.0	53.8
Female Genitals	---	---	57.2	51.8
Breast	---	---	60.3	51.1
Skin	69.6	67.5	74.2	66.0
Bladder and Prostate	68.0	64.2	67.6	62.0
Other	63.1	59.2	62.0	50.8

These differences have been presented graphically on the diagram or charts. None of them are great enough to be statistically significant, if indeed it was to be expected that it would be possible that they could be so great. The standard deviations of any particular group are quite high, both on account of the fact that deaths take place scattered through six decades, and also because in respect of the colored the number of observations is not great. For example, the standard deviation of the ages of 43 colored females who died of cancer of the genitals is 13, and the probable error is roughly two-thirds of that figure. Three times the probable errors will much more than cover the difference between any pair of comparable figures.

But this does not mean an utter lack of significance in the fact that in respect of each and every pair of comparable figures, numbering in all, fourteen, those of the colored are lower than those of the whites. The differences vary in size from 2.1 years in respect of skin cancers among males to 11.2 years in respect of the cancers classified as being "Other Forms" among the females.

If pennies are tossed to fall heads or tails, only twice in about 16,000 throws can one expect a series of fourteen which will land all heads or all tails. (One for each over the fourteenth power of two.) We seem to be quite justified, then, in thinking that this distribution given in the table is not likely to result from chance alone, but is the result of some definite and distinct cause.

**BUCCAL CANCERS.** With an average age at death of 65.5 for these cancers among white males, most deaths occurred at age 68, though four other ages between 58 and 69 inclusive had but one less in number than that age. The range of the series was from 41 to 90 years. For 8 cases specified as being cancer of the tongue, the average age was 66, the youngest being 53, the oldest 84. Thirteen cancers specified as being cancers of the lip, ranged between 48 and 90, the average being 70.5.

**CANCERS OF THE STOMACH AND LIVER.** Among the white males, there were two deaths of persons aged 27 and two aged 95. The greatest number dying at any age was 13, this being the number of those dying aged both 67 and 72. The age group from 65 to 69 inclusive accounted for one-

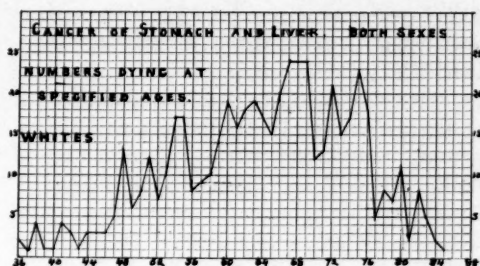


FIG. 3

fifth of all the deaths. Eight persons between the limits 38 and 80, and dying at an average age of 60.5 were certified as dying from oesophageal cancers. Among the females there were three widely separated ages which had much the same number of fatalities. There were 13 deaths of persons aged 54, 14 of persons aged 68, and 15 of persons aged 75. The youngest female was aged 36, the oldest 88. For each series, approximately as many persons died over the age of 65 as died younger. Among colored males, as many died younger than over 59, the ages being from 41 to 75. An equal number of colored females died on each side of age 60, the extreme ages being 24 and 90.

**CANCER OF THE BOWELS.** Four white males died at each of the ages 63, 65, and 73. Among the females, 25 out of 128 deaths occurred in

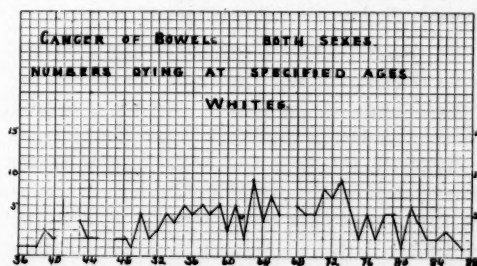


FIG. 4

persons from 70 to 74 inclusive. Eighteen males certified as dying of cancer of the rectum lived on an average 66.5 years, while 13, with cancer of the caecum and colon were aged 57 years. Thirty white females dying from cancer of the rectum were aged 63, and 34 from cancer of the caecum and colon 62.4.

**CANCER OF THE FEMALE GENITALS.** The 288 white females dying of these cancers lived



13,059 years, an average of 57.2. The average deviation of the series is 10.3, the standard deviation 12.6. The youngest who died was aged 24, the oldest 85. The greatest number dying at any one age was 10, this being the number of persons aged 49 and also 65. The number of deaths below 57 approximated those beyond it. Twenty-one dying from cancer of the ovaries lived an average of 54.2 years. The five year period during which most persons died was that from 61 to 65 inclusive, the second highest period being that from 48 to 52.

Among the colored, the average age was 51.8, with a standard deviation of 13. The ages ranged from 26 to 84. The age on either side of which half died was 53. There were no deaths reported as being due to cancer of the ovaries.

**CANCER OF THE BREASTS.** White females numbering 166 died of breast cancers after living 10,008 years, an average of 60.3. The average deviation of the array was 12.0, the standard deviation 14.0. Ages ranged between 25 and 88. The five year period during which most persons died was that including the ages 49 to 53 inclusive, 49 being the age of the most who died at any one age. Half the deaths took place on either side of 60.

Sixteen colored females died aged 51.1 years. The average deviation of this series was 10.6, the standard deviation 13.07. Half the colored females died on each side of age 47.

The consideration of probable causes of the anomalous reaction to cancer on the part of the colored leads us far afield. We have already considered the possibility of the effect of inaccuracy in the statement of the age at death. There may be too small a sampling, in so far as the colored race is concerned. It must be remembered that the figures given are those incidental to the termination of the illness, and that they may give wholly erroneous ideas of the age of cancer commencement. If there are advantages arising from earlier diagnosis, better treatment and more skillful care throughout the whole of the illness, such advantages we would expect to be enjoyed to a more marked degree by the whites. There are no means of knowing the effect of the mixture of blood. The large majority of those classed as colored may have been mixed blood, and it is quite within the range of possibility that persons exhibiting such

a mixture are more vulnerable than either one of the pure stocks. There may be definitely less resistance among the colored, when members of both races are exposed to quite similar conditions.

### **Shock Proof X-ray Apparatus Now Available**

Simplification in design and improved controls have enabled the roentgenologist to constantly improve the quality of his work and obtain uniformly satisfactory results through the standardized technic which these improvements have made possible.

Shortly after the CDX was placed on the market the Victor engineering and designing organization under the leadership of Mr. J. B. Wantz started work on the development of a shock-proof type of X-ray unit for the use of the roentgenologists in the medical X-ray field.

The development of the Shock Proof X-Ray Unit is considered as probably the most important contribution to X-ray science since the advent of the Coolidge Tube. The knowledge and experience gained during these many years are reflected in the design of this new apparatus. Nothing has been left undone to bring to a realization the fine piece of workmanship, in justice to the important role to which it is believed this apparatus will be assigned in future radiology. It is dedicated to that body of specialists, the roentgenologists, who have so immeasurably contributed to the advancement of medical science.

### **Recurrent Meningitis Within a Period of Eight Years**

I. P. BRONSTEIN, Chicago (*Journal A. M. A.*, June 22, 1929), reports an unusual case of recurrent meningitis. The original attack was associated with a nasal operation. The recurrent attacks took place four and six months later, the final attack after a lapse of seven years. The association with a nasal discharge was noted on the second and third attacks, whereas in the fourth attack the nasal discharge was absent but influenza was present. The causative organisms varied, but at no time was the identity of meningococci definitely established.

"If I had it all to do over again, I would marry all the same women again."

# EDITORIAL

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No. 7

### CARELESS WORDS—AND DANGEROUS

Malpractice claims and suits against physicians are increasing. Several factors are responsible for this, among which may be noted the craze for quick and easy wealth; the assumption that physicians guarantee their work; the presence of the ambulance chaser and the contingent fee lawyer; the nurse or interne who knows little but talks much; the occasional carelessness, neglect, or incompetence of the physician himself; and the vituperation of the quacks and cultists. But all of the above items initiate only a small minority of the claims. By far the majority of such suits are due to some remark passed by another physician, presumably ethical and generally a member of the county medical society "in good standing." In fact, it has been asserted that

every malpractice case has two physicians back of it—the physician being sued, and the physician whose thoughtless or intentional remark has stirred up the trouble.

Remarks deliberately aimed to incite suit must be exceedingly few, and such suits are probably somewhat easier to defend than the others, in that if a motive can be demonstrated in court the jury will act accordingly. However, the little comment dropped by Dr. B after he has supplanted Dr. A on a case may have been dropped more to make himself look "big" rather than to purposely belittle Dr. A, but it sometimes happens that it also has been dropped on fertile soil, with the result that poor Dr. A faces a malpractice suit.

A few years ago the majority of suits were brought against physicians of middle life and who had saved a little, rather than against surgeons. This seems to be gradually changing, and suits against surgeons are increasing faster than those against physicians. The surgeon is, of course, particularly exposed to the disgruntled element whose operative or post-operative miracle did not materialize, and if to that is added some indiscreet reference by some other physician or surgeon, resort to the courts may follow. This applies with double force to the case that requires a second operation by a second surgeon, even if it be years after the first. We are all familiar with the bombast who does a cholecystectomy ten years after his confrere had done an appendectomy for an intensely acutely inflamed appendix, and who lambasts his preceding explorer because he "found massive adhesions at the cecum." And we know only too well the wonder who "will make everything right this time," as well as the cad who "could have saved him if I had seen him two hours sooner." Not all of this stripe lead their professional victims to the courts but they at least lead to unpaid bills and damaged reputations. As a matter of fact this brand of practitioner is usually anxious not to appear in court, is generally a moral coward, frequently of mediocre ability, and always a sublime egotist. How much better it would be if they would withhold the dirty dig, even if it called for a little charity and forbearance on their part.

This is a question of common decency and not merely a matter of ethics. In this high pressure age things are said and done in a hurry, often automatically or without due consideration of the effect or consequences—careless words—and dangerous!

Insurance companies are cold-blooded business concerns, rarely given to sentiment. One of the largest of the medical indemnity insurers has been so strongly impressed by the increase in malpractice claims that it has sent out a notice that says among other things:

"Refrain from making remarks about any other doctor's work. Without doubt this is a common source of instigating malpractice litigation and most such remarks are thoughtlessly made."

Things have reached a pretty state of affairs and competition its lowest plane when all over this nation it seems necessary to remind physicians that we are slipping in our professional morals, our decency, and our ethics. What a commentary, that a group of laymen have to beg us to refrain from the dirty dig, from careless words—and dangerous!

#### CONSTRUCTION VERSUS DESTRUCTION

The time is ripe for constructive criticism regarding the care of the population of the different state and county institutions. The meeting of the Medical Society of Delaware in October affords an opportunity for frank discussion concerning the conditions as they exist in these institutions, but let it not be a discussion based on hearsay, but rather founded on facts obtained by careful inspection and study of all state and county institutions, and in order that the conditions, good and bad, of all public institutions be presented to the profession, it would be well that private institutions be included in the general inspection.

It is suggested that the President of the Medical Society of Delaware appoint three or four members of the Society, members with a knowledge of institutional and hospital work, to join the standing Hospital Committee in a general survey; that he request these men to submit a detailed report concerning the facilities which exist, and to what extent these facilities are used by the public where they do exist. This report should be presented at the Society's annual meeting in October for discussion and action.

There is no lack of hospitals and institutions

in Delaware, but rather there is a lack of modern facilities in many of them. There should not be any striving for competition among the different hospitals and institutions; on the contrary there should be a desire for cooperation and coordination which will serve the people to the best advantage. The public must be educated to the needs of the State in this respect, and the problem seems most logically to fall into the hands of the medical profession.

#### Bogy of Heart-Block in Digitalis Therapy

William D. Reid, Boston (*Journal A. M. A.*, June 22, 1929) asserts that the fear of the production of heart-block by digitalis medication seems to indicate a misconception of the therapeutic use of this drug. Heart-block is not a prominent feature of the toxic action of digitalis. In fact, some degree of impairment in auriculo-ventricular conduction usually appears at the dosage associated with the therapeutic effects. There are no records of adequately studied patients who have died solely as a result of digitalis-induced heart-block. Complete heart-block may sometimes be present for years in patients who experience little if any reduction in their ability to perform heavy muscular work. The ventricle possesses tissue that is capable of initiating contractions, and the circulation adjusts to the slowed rate without untoward symptoms. Heart-block, not drug-induced, is usually associated with some serious form of heart disease whose lesions are not limited to the junctional tissues. It is the widespread and often progressive lesions of these diseases which doubtless have caused heart-block to be considered serious. The production of therapeutic heart-block of a degree sufficient to slow the ventricular rate to normal, in such conditions as auricular fibrillation with an accelerated heart (ventricular) rate, is an established principle in the use of digitalis medication. It is occasionally beneficial to convert partial into complete heart-block. Digitalis is often of benefit in complete heart-block with insufficiency of the heart. Reid concludes that the inordinate fear of the production of heart-block by digitalis may be disastrous in those cases in which the patient's only chance is dependent on the full therapeutic effects of the drug. Digitalis should be administered until beneficial results are obtained or there is evidence of toxic effects.



## DELAWARE PHARMACEUTICAL SOCIETY

### Prescription Prices

When the funny man in the daily newspaper office runs short of subjects, he can always fall back on a joke about druggists' prices. Almost everybody has a prescription filled some time or other and as few are pleased at having to part with their money, the jokesmith is sure of having a sympathetic following when he pictures the druggist as being rapacious. There are lots of things that the man whose sole object is to amuse does not consider it necessary to mention and of which the uninformed and unthinking part of the public takes no cognizance.

In the first place, it may be stated frankly that prices charged in the prescription department for a mixture of two or three drugs dispensed on prescription are greater in proportion than would be charged for the same quantities of these drugs bought by the ounce or pound, or by the dime's worth, over the sales counter. The reasons are not far to seek and are well known to everyone who has given the matter mature thought.

The pharmacist who prepares the medicine in the prescription department receives a higher salary than is paid to a mere salesman. He has to serve a four-year apprenticeship, perhaps go through a college of pharmacy, and then pass a rigid board examination before he can obtain a license to fill prescriptions. He is more nearly in the position of the physician who charges two dollars for writing the prescription than that of the young man in the front part of the store who sells sulphur by the pound and ammonia water by the bottle. No one thinks it strange that the physician charges for his knowledge, skill and responsibility. The responsibility of the man who fills the prescription is as great as is that of the man who writes it, and his knowledge and skill are of a high order.

Aside from this, however, looked at simply as a matter of merchandising, the prescription department is on a footing very different from that of the sales counter. "Turnover" is the magic word in buying and selling. Carry popular lines, buy often, sell quickly, reinvest, keep capital in a liquid state—these are the watchwords of the merchant. In his prescription department the druggist can not choose the lines he will carry, but must be prepared to supply at once what

any physician may order at any time. In many cases he can not buy often, as an original package of some little used item may last a long time and cost more than the profit on the first half-dozen prescriptions in which he uses a few grains of that item. If the original package deteriorates before it is used up, it may prove a net loss to him.

Time is a big factor in any business. It takes very little time to weigh and wrap an ounce of zinc sulphate or of camphor, but when a few grains of these substances are to be dispensed in the form of eye water, more time and care are required to weigh them accurately, more time and care are necessary to see that either they are completely dissolved or that any undissolved residuum is filtered out. Further time and care are used in making sure that the bottle is sterile and that many other precautions are observed in order that the product may give the desired results rather than untoward ones.

Before a druggist can hold himself out as being a prescriptionist, he must equip his store with various kinds of more or less expensive apparatus. He must have balances accurate to the fraction of a grain, measuring glasses graduated with almost microscopic accuracy, filters, percolators, facilities for heating and cooling, special provisions for keeping certain drugs in a proper state, stills, mixing machinery and other things that the public knows little or nothing about, but all of which add to the overhead of the pharmacist. The salesman in the front of the store not only does not have to be provided with such paraphernalia but would not know how to use it if he had it. The pharmacist is more than a merchant.

We wonder if it ever occurs to the man who writes the pithy paragraphs for the newspapers that he is inconsistent in his drug-store jokes. He talks about over-charging for filling prescriptions and he talks about the department-store appearance of the front of the drug store. If there is so much profit in filling prescriptions, why does the druggist find it necessary, in order that he may make a living, to put in hardware, jewelry, stationery, candy, a lunch counter, phonographs, radio sets, umbrellas, clocks and all the rest of it? Some of the larger drug stores which are divided into departments and keep accurate account have found that the prescription department is their least profitable one. Still

such a department is necessary to make a store a drug store, and there is a peculiar drawing power about a drug store. If this were not true many druggists who are in the drug business not on account of their love of it but merely to make money would discontinue their prescription departments.

No one objects to the wisecracks of the newspaper humorist. But for them life would lack much of its spice. The danger they are to druggists is that unless the public hears the truth now and then it will begin to take joke-smiths seriously and regard the pharmaceutical profession as a band of extortionists. That would be unfortunate.

### BOOK REVIEW

*Criminal Responsibility*, by Charles Mercier, M. D., F. R. C. P., F. R. C. S. Lecturer on Insanity, Westminster Hospital Medical School, and Medical School of the Royal Free Hospital, London. Cloth. Pp. 256. Price \$5.00. Brooklyn: Physicians and Surgeons Book Company, 1926.

After wading through a long chapter of pros and cons which may or may not be interesting, according to the individual tastes of the reader, the author finally reaches the subject proper. Some fifty pages are spent in dealing with responsibility, a greater part of which is a criticism and correction of other definitions of a psychological or legal type. This reader throughout the chapter had a definite desire to skip pages in order to find out what it was all about.

After the introductory chapter there are detailed discussions concerning harm and wrong, with concise definitions of intention, motive, and aim. The discussion of wrong is interesting and clear, as well as are the conclusions as to when a deed is wrong and as to when it is not. However, we fail to find where he places the unintentional non-self-seeking wrong due to ignorance of prevailing customs. Or is this not considered wrong? If it is not, is punishment justifiable in such cases?

The writer seems to have a clear, sympathetic and just view as to what extent abnormal mentality should play in the role of punishment. After a concise discussion of insanity he discusses perverted forms of all types of activity, and the role mental control should play in the responsibility of the individual. He finally defines responsibility by saying the actor must

"will the act, intend harm, desire primarily his own gratification. Furthermore the act must be unprovoked and the actor must know and appreciate the circumstances in which the act is done." He closes by two chapters discussing the answers of judges and procedure and practice.

The book naturally seems to be of practical value to all physicians who deal more or less with court procedure in their practice, this procedure involving purely mental deviation and not physical.

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*The Conquest of Cancer by Radium and Other Methods*. By Daniel T. Quigley, M. D., Instructor in Surgery, University of Nebraska. Pp. 539, with 334 illustrations. Cloth. Price, \$6.00. Philadelphia: F. A. Davis Company, 1929.

The first section of this work deals with the causation and prophylaxis of cancer. The author gives a survey of these phases, quite readable in parts, but he makes statements that should be qualified, amplified, or deleted, such as "no cancer ever grows without the irritation produced by microorganisms."

The second section, on the treatment of cancer, is the main part of the work, and deals primarily with radium. Here the author's rationale is more orthodox, yet we feel he is unduly enthusiastic over radium.

Sections three and four summarize "what we know concerning cancer," and diseases other than cancer, in which radium is of value. There is also an appendix on the usefulness of a radiological hospital service.

The typography is attractive, the illustrations are numerous and good, and the index is ample. The book, however, despite its title, is not a text on the technique of radiation, but rather a plea for radiation, and as such will make interesting reading for the more matured medical minds.

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*Osteomyelitis and Compound Fractures*. By H. Winnett Orr, M. D., Chief Surgeon, Nebraska Orthopedic Hospital, Lincoln, Neb. Pp. 208, with 54 illustrations. Cloth. Price, \$5.00. St. Louis: C. V. Mosby Company, 1929.

This small monograph by Dr. Orr, is his first formal and complete exposition of his own method of treating osteomyelitis. As Dr. John Ridlon, to whom the book is dedicated, says in the introduction, "Dr. Orr's method can be carried out by even a clumsy surgeon and a lazy one."

Orr's method, decried at first as lacking a scientific basis, is now rapidly making converts among the profession by dint of sheer merit and superior results. We are convinced the method is scientific and based on clinical pathology, and we feel that Dr. Orr fully sustains his end of the argument in his brief monograph. The book should be in the hands of all surgeons (especially the general surgeons) who treat the conditions described.

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Clinical Laboratory Methods. By Russell T. Haden, M. D., Professor of Experimental Medicine, University of Kansas. Third edition. Pp. 317, with 69 illustrations and four-color plates. Cloth. Price, \$5.00. St. Louis: C. V. Mosby Company, 1929.

This new edition of Haden's laboratory manual has been brought fully up to date. As he states in the preface, only those methods are described as have proved both practical and dependable, while certain tests, rarely called for, have been omitted. A few entirely new methods have been added. There are chapters on the urine, gastric juice, sputum, feces, blood, serology, bacteriological media, etc., miscellaneous pathological, chemical, and histological procedures, and examination of milk and water. There are numerous (63) tables that expedite the work.

The various procedures are described tersely but accurately. Only one method is given for each procedure, and no attempt is made to interpret the results derived. However, accuracy, the main consideration in laboratory work, will be obtained if the text is followed. The reviewer hopes that, in view of the number of technicians who are now determining the basal metabolism rate, this subject will receive consideration in the next edition. Haden's book has attained a deserved popularity; it is one of the very best of the smaller laboratory guides.

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### Infection With Organisms of Vincent's Angina Following Human Bite

The infection is usually limited to the mucous membranes. In the case reported by C. REX FULLER and JOHN C. COTTRELL, Salida, Colo., (*Journal A. M. A.*, June 15, 1929), the infection occurred in the finger following a bite by a person suffering from ulcerative stomatitis due to Vincent's angina.

### Laboratory-Endorsed Therapeutic Agents

W. H. MANWARING and A. P. KRUEGER, Stanford University, Calif., (*Journal A. M. A.*, July 13, 1929), assert that three decades of clinical experience with laboratory-endorsed vaccines and antisera give ample data from which to calculate the probability coefficient for this class of therapeutic agents. Hundreds of theoretically logical, laboratory-endorsed vaccines and antisera have been tried by clinicians; 95 per cent of them have been thrown into the clinical discard. An impartial mathematician would conclude from this that fundamental immunologic theories and current experimental laboratory methods assay less than 5 per cent clinically verifiable truth. He would unhesitatingly predict that, of twenty theoretically logical, laboratory-endorsed vaccines and antisera, only one would prove a clinical success. It would be more difficult for a mathematician to make an equally reliable calculation for laboratory-endorsed agents in collateral fields of applied immunology; for example, the current laboratory-endorsed bacteriophage. Previous experience with biologic antiseptics of this class has been too meagre for more than an approximate estimate. He would be forced to base his approximation on two or three imperfect parallels, with serum bacteriolysin and leukocytic extracts as the closest historical examples. If forced to make an approximate calculation from available historical data, a statistician would probably take the average of the demonstrated clinical zero for leukocytic extract, the 1 per cent clinical value of serum bacteriolysin and the maximum immunologic efficiency, 5 per cent. This average is 2 per cent. A liberal approximation would be 3 per cent, which is surely a therapeutic gamble, with the odds at least 30 to 1 against clinical success.

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A gentleman asked a poor old Scot:  
"Sandy, how's the world treating you?"  
"Very seldom, sir, very seldom."

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The film that had the greatest attendance of men in Aberdeen was the one that appeared entitled "The Woman Pays."



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